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Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: Tue Sep 25 12:12:43 EDT 2007

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\*\*\*\*\*

Reviewer Comments:

? ?

Delete the Non Ascii characters appears above the headings.

?? ?? ?C# hC# h \* + O s ? ? ? ? N P ? ?

/

0

>

?

Please delete the end of file text which appears below seq id 656

And save the file in ASCII txt mode

delete the extra heading inserted in the sequence listing which appears one below the other.

\*\*\*\*\*

Application No: 10576331 Version No: 1.0

**Input Set:****Output Set:**

**Started:** 2007-09-12 13:26:32.596  
**Finished:** 2007-09-12 13:27:06.289  
**Elapsed:** 0 hr(s) 0 min(s) 33 sec(s) 693 ms  
**Total Warnings:** 2355  
**Total Errors:** 342  
**No. of SeqIDs Defined:** 656  
**Actual SeqID Count:** 656

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 402	Undefined organism found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 402	Undefined organism found in <213> in SEQ ID (12)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (12)
W 402	Undefined organism found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 402	Undefined organism found in <213> in SEQ ID (18)

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Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (34)
W 402	Undefined organism found in <213> in SEQ ID (37)
W 402	Undefined organism found in <213> in SEQ ID (38)
W 402	Undefined organism found in <213> in SEQ ID (40)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (40)
W 213	Artificial or Unknown found in <213> in SEQ ID (45)
W 213	Artificial or Unknown found in <213> in SEQ ID (46)
W 213	Artificial or Unknown found in <213> in SEQ ID (47)
W 213	Artificial or Unknown found in <213> in SEQ ID (48)
W 213	Artificial or Unknown found in <213> in SEQ ID (49)
W 213	Artificial or Unknown found in <213> in SEQ ID (50)
W 213	Artificial or Unknown found in <213> in SEQ ID (51)
W 213	Artificial or Unknown found in <213> in SEQ ID (52)
W 402	Undefined organism found in <213> in SEQ ID (61)
W 402	Undefined organism found in <213> in SEQ ID (62)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (62)
W 402	Undefined organism found in <213> in SEQ ID (65)
W 402	Undefined organism found in <213> in SEQ ID (66)
W 402	Undefined organism found in <213> in SEQ ID (69) This error has occurred more than 20 times, will not be displayed

**Input Set:**

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Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (79)
W 213	Artificial or Unknown found in <213> in SEQ ID (80)
W 213	Artificial or Unknown found in <213> in SEQ ID (81)
W 213	Artificial or Unknown found in <213> in SEQ ID (82)
W 213	Artificial or Unknown found in <213> in SEQ ID (83)
W 213	Artificial or Unknown found in <213> in SEQ ID (84) This error has occurred more than 20 times, will not be displayed
E 341	'Xaa' position not defined SEQID (125) POS (170)
E 341	'Xaa' position not defined SEQID (125) POS (171)
E 341	'Xaa' position not defined SEQID (125) POS (172)
E 341	'Xaa' position not defined SEQID (125) POS (173)
E 341	'Xaa' position not defined SEQID (125) POS (174)
E 341	'Xaa' position not defined SEQID (125) POS (175)
E 341	'Xaa' position not defined SEQID (125) POS (176)
E 341	'Xaa' position not defined SEQID (125) POS (177)
E 341	'Xaa' position not defined SEQID (125) POS (178)
E 341	'Xaa' position not defined SEQID (125) POS (179)
E 341	'Xaa' position not defined SEQID (125) POS (180)
E 341	'Xaa' position not defined SEQID (125) POS (181)
E 341	'Xaa' position not defined SEQID (125) POS (182)
E 341	'Xaa' position not defined SEQID (125) POS (183)
E 341	'Xaa' position not defined SEQID (125) POS (184)
E 341	'Xaa' position not defined SEQID (125) POS (185)

**Input Set:**

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**Actual SeqID Count:** 656

Error code	Error Description
E 341	'Xaa' position not defined SEQID (125) POS (186)
E 341	'Xaa' position not defined SEQID (125) POS (187)
E 341	'Xaa' position not defined SEQID (125) POS (188)
E 341	'Xaa' position not defined SEQID (125) POS (189) This error has occurred more than 20 times, will not be displayed
W 112	Upper case found in data; Found at position(977) SEQID(656)
W 112	Upper case found in data; Found at position(1528) SEQID(656)
W 112	Upper case found in data; Found at position(1930) SEQID(656)
W 112	Upper case found in data; Found at position(1950) SEQID(656)
W 112	Upper case found in data; Found at position(2002) SEQID(656)
W 112	Upper case found in data; Found at position(2030) SEQID(656)
W 112	Upper case found in data; Found at position(2440) SEQID(656)
W 112	Upper case found in data; Found at position(2452) SEQID(656)
W 112	Upper case found in data; Found at position(2496) SEQID(656)
W 112	Upper case found in data; Found at position(2500) SEQID(656)
W 112	Upper case found in data; Found at position(2504) SEQID(656)
W 112	Upper case found in data; Found at position(2531) SEQID(656)
W 112	Upper case found in data; Found at position(2552) SEQID(656)
W 112	Upper case found in data; Found at position(2941) SEQID(656)
W 112	Upper case found in data; Found at position(2945) SEQID(656)
W 112	Upper case found in data; Found at position(2966) SEQID(656)
W 112	Upper case found in data; Found at position(2991) SEQID(656)
W 112	Upper case found in data; Found at position(3015) SEQID(656)

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Error code	Error Description
W 112	Upper case found in data; Found at position(3043) SEQID(656)
W 112	Upper case found in data; Found at position(3047) SEQID(656) This error has occurred more than 20 times, will not be displayed
E 342	'n' position not defined found at POS: 4496 SEQID(656)
E 342	'n' position not defined found at POS: 9429 SEQID(656)
E 342	'n' position not defined found at POS: 12391 SEQID(656)
E 342	'n' position not defined found at POS: 12931 SEQID(656)
E 342	'n' position not defined found at POS: 19721 SEQID(656)
E 342	'n' position not defined found at POS: 30772 SEQID(656)
E 342	'n' position not defined found at POS: 30776 SEQID(656)
E 342	'n' position not defined found at POS: 30779 SEQID(656)
E 342	'n' position not defined found at POS: 30783 SEQID(656)
E 342	'n' position not defined found at POS: 30787 SEQID(656)
E 342	'n' position not defined found at POS: 30791 SEQID(656)
E 342	'n' position not defined found at POS: 30795 SEQID(656)
E 342	'n' position not defined found at POS: 30799 SEQID(656)
E 342	'n' position not defined found at POS: 30803 SEQID(656)
E 342	'n' position not defined found at POS: 30807 SEQID(656)
E 342	'n' position not defined found at POS: 30811 SEQID(656)
E 342	'n' position not defined found at POS: 30815 SEQID(656)
E 342	'n' position not defined found at POS: 30819 SEQID(656)
E 342	'n' position not defined found at POS: 30823 SEQID(656)
E 342	'n' position not defined found at POS: 30827 SEQID(656)

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**Actual SeqID Count:** 656

Error code	Error Description
E 259	Found undefined lettercode; POS (90993) SEQID(656)
E 259	Found undefined lettercode; POS (90994) SEQID(656)
E 259	Found undefined lettercode; POS (90995) SEQID(656)
E 259	Found undefined lettercode; POS (90996) SEQID(656)
E 259	Found undefined lettercode; POS (90997) SEQID(656)
E 259	Found undefined lettercode; POS (90998) SEQID(656)
E 259	Found undefined lettercode; POS (90999) SEQID(656)
E 259	Found undefined lettercode; POS (91000) SEQID(656)
E 259	Found undefined lettercode; POS (91001) SEQID(656)
E 259	Found undefined lettercode; POS (91002) SEQID(656)
E 259	Found undefined lettercode; POS (91003) SEQID(656)
E 259	Found undefined lettercode; POS (91004) SEQID(656)
E 259	Found undefined lettercode; POS (91005) SEQID(656)
E 259	Found undefined lettercode; POS (91006) SEQID(656)
E 259	Found undefined lettercode; POS (91008) SEQID(656)
E 259	Found undefined lettercode; POS (91009) SEQID(656)
E 259	Found undefined lettercode; POS (91010) SEQID(656)
E 259	Found undefined lettercode; POS (91011) SEQID(656)
E 259	Found undefined lettercode; POS (91012) SEQID(656)
E 259	Found undefined lettercode; POS (91013) SEQID(656)

This error has occurred more than 20 times, will not be displayed





<210> 1  
 <211> 1680  
 <212> DNA  
 <213> Cellulomonas strain 69B4

<400> 1  
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 accagcacgc tcctaacctc cgagcacccg cgaccgcccg gtgcgatgaa agggacgaac 180  
 cgagatgaca ccacgcacag tcacgcgggc cctggccgtg gccaccgcag ccgccacact 240  
 cctggcaggc ggcatggccg cccaggccaa cgagcccga ccaccggga gcgcgagcgc 300  
 accgccacgc ctggccgaga agctcgaccc cgacctctc gaggccatgg agcgcgacct 360  
 gggcctcgac gcggaggaag ccgcgccac cctggcgttc cagcacgacg cagccgagac 420  
 cggcgaggcc ctgcgcaag agctcgacga ggacttcgcc ggcacctggg tcgaggacga 480  
 cgtcctgtac gtgccacca ccgacgagga cgcgcgtcgag gaggtcgagg gcgaaggcgc 540  
 caccggccgtc accgtcgagc actccctggc cgacctcgag gectggaaga ccgtcctcga 600  
 cgccgcctc gagggccacg acgacgtgcc cacctggtag gtgcagctcc cgaccaacag 660  
 cgtcgtcgtc gccgtcaagg ccggagccca ggacgtcgcc gccggcctcg tcgaagggtc 720  
 cgacgtcccg tcgacgcg tgacctctgt cgagaccgac gagacccgc ggaccatgtt 780  
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 cgcggtcaac ggcggttca tcaccgccg ccactgcggc cgcaccggcg ccaccaccgc 900  
 caacccacc gggaccttcg ccgggtccag cttcccgggc aacgactacg cgttcgtccg 960  
 tacggggcc ggcgtgaacc tgcctggcca ggtcaacaac tactccggtg gccgcgtcca 1020  
 ggtcgccggg cacaccgcgg ccccgctcgg ctcgccgtg tgcgggtccg ggtcgaccac 1080  
 cgggtggcac tgcggcacca tcaactgcgt caactcctcg gtcacctacc ccgagggcac 1140  
 cgtccgcggc ctgatccgca ccaccgtctg cgcgcgagcc ggcgactccg gtggctcgct 1200  
 gctcgccggc aaccaggccc agggcgctcac gtccggcggc tccggcaact gccgcaccgg 1260  
 tggcaccacg ttcttccagc cgggtcaaccc catcctccag gcgtacggcc tgaggatgat 1320  
 caccacggac tcgggcagca gcccgggccc tgcaccgacc tcctgcaccg gctacgcccg 1380  
 caccttcacc gggaccctcg cggccggccg ggccgcgc cagcccaacg ggtcctacgt 1440  
 gcaggtcaac cgggtccggga cccacagcgt gtgcctcaac gggccctccg gtgcggactt 1500  
 cgacctctac gtgcagcgt ggaacggcag ctctgggtg accgtcgccc agagcacctc 1560  
 cccgggtcc aacgagacca tcacctaccg cggcaacgcc ggctactacc gctacgtggt 1620  
 caacgcgcg tcgggtccg gtgcctacac catggggctc acctccct gacgtagcgc 1680

<210> 2  
 <211> 1488  
 <212> DNA  
 <213> Cellulomonas strain 69B4

<400> 2  
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 ccacgcctgg ccgagaagct cgaccccgac ctctcgagg ccattggagc cgacctgggc 180  
 ctcgacgcgg aggaagccgc cgccacctg gcgttccagc acgacgcagc cgagaccggc 240  
 gagggcctcg ccgaagagct cgacgaggac ttcgccggca cctgggtcga ggacgacgtc 300  
 ctgtacgtcg ccaccaccga cgaggacgcc gtcgaggagg tcgagggcga aggcgccacg 360  
 gccgtcaccg tcgagcactc cctggccgac ctcgaggcct ggaagaccgt cctcgacgcc 420  
 gccctcgagg gccacgacga cgtgccacc tggtagctcg acgtcccga caacagcgtc 480  
 gtcgtcgccg tcaaggccgg agcccaggac gtccgcgcg gectcgtcga aggtgccgac 540  
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 gtgatcggcg gcaacgcta caccatcggg gggcgcagcc gctgctcgat cgggttcgcg 660  
 gtcaacggcg ggttcatac cgccggccac tgcggccgca ccggcgccac caccgccaac 720  
 cccaccggga cttcgccg gtccagcttc ccgggaacg actacgcgtt cgtccgtacc 780  
 gggggccggc tgaacctgct ggcccaggtc aacaactact ccggtggccg cgtccaggtc 840  
 gccgggcaca ccggggccc cgtcggtcgt gccgtgtgcc ggtccgggtc gaccaccggg 900  
 tggcactgcg gcaccatcac tgcgtcaac tcctcggta cctacccga gggcaccgtc 960

cgcggcctga	tccgcaccac	cgtctgcgcc	gagcccgccg	actccggtgg	ctcgctgctc	1020
gccggcaacc	agggccagg	cgtcacgtcc	ggcggtccg	gcaactgccg	caccggtggc	1080
accacgttct	tccagccggt	caaccccatc	ctccaggcgt	acggcctgag	gatgatcacc	1140
acggactcgg	gcagcagccc	ggcccttgca	ccgacctcct	gcaccggcta	cgcccgacc	1200
ttcacggga	ccctcgcggc	cggccggggc	gccgcccagc	ccaacgggtc	ctacgtgcag	1260
gtcaaccggt	ccgggaccca	cagcgtgtgc	ctcaacgggc	cctccggtgc	ggacttcgac	1320
ctctacgtgc	agcgttgaa	cggcagctcc	tgggtgaccg	tcgccagag	cacctcccc	1380
ggctccaacg	agaccatcac	ctaccgggc	aacgcgggt	actaccgcta	cgtggtcaac	1440
gccgcgtccg	gctccggtgc	ctacaccatg	gggtcaccc	tccctga		1488

<210> 3

<211> 1404

<212> DNA

<213> Cellulomonas spp.

<400> 3

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accctggcgt	tccagcacga	cgcagccgag	accggcgagg	ccctcgccga	agagctcgac	180
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caggacgtcg	ccgcggcct	cgtcgaaggt	gccgacgtcc	cgtccgacgc	cgtgaccttc	480
gtcgagaccg	acgagacccc	gcggaccatg	ttcgacgtga	tcggcgcaa	cgcctacacc	540
atcggggggc	gcagccgctg	ctcgatcggg	ttcgcggtca	acggcggtt	catcacgcc	600
ggccactgcg	gccgcaccgg	cgccaccacc	gccaaccca	ccgggacctt	cgccgggtcc	660
agcttcccgg	gcaacgacta	cgcgttcgtc	cgtaccgggg	ccggcgtgaa	cctgctggcc	720
cagggtcaaca	actactccgg	tggccgcgtc	caggtcgcgc	ggcacaccgc	ggcccccgtc	780
ggctcggccg	tgtgccggtc	cgggtcgacc	accgggtggc	actgcggcac	catcactgcg	840
ctcaactcct	cggtcaccta	ccccgagggc	accgtccgcg	gcctgatccg	caccaccgtc	900
tgcgccgagc	ccggcgactc	cgggtggctcg	ctgctcgcgc	gcaaccaggc	ccagggcgtc	960
acgtccggcg	gctccggcaa	ctgcgcacc	ggtggcacca	cgttcttcca	gccggtcaac	1020
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gtgtgcctca	acgggccctc	cgggtgcggac	ttcgacctct	acgtgcagcg	ctggaacggc	1260
agctcctggg	tgaccgtcgc	ccagagcacc	tcccccggt	ccaacgagac	catcacctac	1320
cgcggcaacg	ccggctacta	ccgtacgtg	gtcaacgcgc	cgtccggctc	cgggtgcctac	1380
accatggggc	tcacctccc	ctga				1404

<210> 4

<211> 567

<212> DNA

<213> Cellulomonas spp.

<400> 4

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gccaaccca	ccgggacctt	cgcgggtcc	agcttcccgg	gcaacgacta	cgcgttcgtc	180
cgtaccgggg	ccggcgtgaa	cctgctggcc	cagggtcaaca	actactccgg	tggccgcgtc	240
caggtcgcgc	ggcacaccgc	ggcccccgtc	ggctcggccg	tgtgccggtc	cgggtcgacc	300
accgggtggc	actgcggcac	catcactgcg	ctcaactcct	cggtcaccta	ccccgagggc	360
accgtccgcg	gcctgatccg	caccaccgtc	tgcgccgagc	ccggcgactc	cgggtggctcg	420
ctgctcgcgc	gcaaccaggc	ccagggcgtc	acgtccggcg	gctccggcaa	ctgccgcacc	480
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atcaccacgg	actcgggcag	cagcccg				567

<210> 5  
 <211> 83  
 <212> DNA  
 <213> Cellulomonas strain 69B4

<400> 5  
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 caggcggcat ggccgccag gcc 83

<210> 6  
 <211> 495  
 <212> PRT  
 <213> Cellulomonas strain 69B4

<400> 6

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Ala	Thr	Leu	Leu	Ala	Gly	Gly	Met	Ala	Ala	Gln	Ala	Asn	Glu	Pro	Ala
		20						25					30		
Pro	Pro	Gly	Ser	Ala	Ser	Ala	Pro	Pro	Arg	Leu	Ala	Glu	Lys	Leu	Asp
		35					40					45			
Pro	Asp	Leu	Leu	Glu	Ala	Met	Glu	Arg	Asp	Leu	Gly	Leu	Asp	Ala	Glu
	50					55					60				
Glu	Ala	Ala	Ala	Thr	Leu	Ala	Phe	Gln	His	Asp	Ala	Ala	Glu	Thr	Gly
65					70				75					80	
Glu	Ala	Leu	Ala	Glu	Glu	Leu	Asp	Glu	Asp	Phe	Ala	Gly	Thr	Trp	Val
			85						90					95	
Glu	Asp	Asp	Val	Leu	Tyr	Val	Ala	Thr	Thr	Asp	Glu	Asp	Ala	Val	Glu
			100						105					110	
Glu	Val	Glu	Gly	Glu	Gly	Ala	Thr	Ala	Val	Thr	Val	Glu	His	Ser	Leu
		115					120					125			
Ala	Asp	Leu	Glu	Ala	Trp	Lys	Thr	Val	Leu	Asp	Ala	Ala	Leu	Glu	Gly
	130					135					140				
His	Asp	Asp	Val	Pro	Thr	Trp	Tyr	Val	Asp	Val	Pro	Thr	Asn	Ser	Val
145				150						155				160	
Val	Val	Ala	Val	Lys	Ala	Gly	Ala	Gln	Asp	Val	Ala	Ala	Gly	Leu	Val
			165						170					175	
Glu	Gly	Ala	Asp	Val	Pro	Ser	Asp	Ala	Val	Thr	Phe	Val	Glu	Thr	Asp
		180					185						190		
Glu	Thr	Pro	Arg	Thr	Met	Phe	Asp	Val	Ile	Gly	Gly	Asn	Ala	Tyr	Thr
	195						200					205			
Ile	Gly	Gly	Arg	Ser	Arg	Cys	Ser	Ile	Gly	Phe	Ala	Val	Asn	Gly	Gly
	210					215					220				
Phe	Ile	Thr	Ala	Gly	His	Cys	Gly	Arg	Thr	Gly	Ala	Thr	Thr	Ala	Asn
225				230						235				240	
Pro	Thr	Gly	Thr	Phe	Ala	Gly	Ser	Ser	Phe	Pro	Gly	Asn	Asp	Tyr	Ala
			245						250					255	
Phe	Val	Arg	Thr	Gly	Ala	Gly	Val	Asn	Leu	Leu	Ala	Gln	Val	Asn	Asn
		260						265					270		
Tyr	Ser	Gly	Gly	Arg	Val	Gln	Val	Ala	Gly	His	Thr	Ala	Ala	Pro	Val
	275					280						285			
Gly	Ser	Ala	Val	Cys	Arg	Ser	Gly	Ser	Thr	Thr	Gly	Trp	His	Cys	Gly

290		295		300
Thr Ile Thr Ala Leu Asn Ser Ser Val Thr Tyr Pro Glu Gly Thr Val				
305		310		315
Arg Gly Leu Ile Arg Thr Thr Val Cys Ala Glu Pro Gly Asp Ser Gly				
	325		330	335
Gly Ser Leu Leu Ala Gly Asn Gln Ala Gln Gly Val Thr Ser Gly Gly				
	340		345	350
Ser Gly Asn Cys Arg Thr Gly Gly Thr Thr Phe Phe Gln Pro Val Asn				
	355		360	365
Pro Ile Leu Gln Ala Tyr Gly Leu Arg Met Ile Thr Thr Asp Ser Gly				
	370		375	380
Ser Ser Pro Ala Pro Ala Pro Thr Ser Cys Thr Gly Tyr Ala Arg Thr				
385		390		395
Phe Thr Gly Thr Leu Ala Ala Gly Arg Ala Ala Ala Gln Pro Asn Gly				
	405		410	415
Ser Tyr Val Gln Val Asn Arg Ser Gly Thr His Ser Val Cys Leu Asn				
	420		425	430
Gly Pro Ser Gly Ala Asp Phe Asp Leu Tyr Val Gln Arg Trp Asn Gly				
	435		440	445
Ser Ser Trp Val Thr Val Ala Gln Ser Thr Ser Pro Gly Ser Asn Glu				
450		455		460
Thr Ile Thr Tyr Arg Gly Asn Ala Gly Tyr Tyr Arg Tyr Val Val Asn				
465		470		475
Ala Ala Ser Gly Ser Gly Ala Tyr Thr Met Gly Leu Thr Leu Pro				
	485		490	495

<210> 7  
 <211> 467  
 <212> PRT  
 <213> Cellulomonas strain 69B4

<400> 7

Asn Glu Pro Ala Pro Pro Gly Ser Ala Ser Ala Pro Pro Arg Leu Ala				
1		5		10
Glu Lys Leu Asp Pro Asp Leu Leu Glu Ala Met Glu Arg Asp Leu Gly				
	20		25	30
Leu Asp Ala Glu Glu Ala Ala Ala Thr Leu Ala Phe Gln His Asp Ala				
	35		40	45
Ala Glu Thr Gly Glu Ala Leu Ala Glu Glu Leu Asp Glu Asp Phe Ala				
	50		55	60
Gly Thr Trp Val Glu Asp Asp Val Leu Tyr Val Ala Thr Thr Asp Glu				
65		70		75
Asp Ala Val Glu Glu Val Glu Gly Glu Gly Ala Thr Ala Val Thr Val				
	85		90	95
Glu His Ser Leu Ala Asp Leu Glu Ala Trp Lys Thr Val Leu Asp Ala				
	100		105	110
Ala Leu Glu Gly His Asp Asp Val Pro Thr Trp Tyr Val Asp Val Pro				
	115		120	125
Thr Asn Ser Val Val Val Ala Val Lys Ala Gly Ala Gln Asp Val Ala				
	130		135	140
Ala Gly Leu Val Glu Gly Ala Asp Val Pro Ser Asp Ala Val Thr Phe				
145		150		155
Val Glu Thr Asp Glu Thr Pro Arg Thr Met Phe Asp Val Ile Gly Gly				
	165		170	175
Asn Ala Tyr Thr Ile Gly Gly Arg Ser Arg Cys Ser Ile Gly Phe Ala				
	180		185	190

Val	Asn	Gly	Gly	Phe	Ile	Thr	Ala	Gly	His	Cys	Gly	Arg	Thr	Gly	Ala
	195						200					205			
Thr	Thr	Ala	Asn	Pro	Thr	Gly	Thr	Phe	Ala	Gly	Ser	Ser	Phe	Pro	Gly
	210					215					220				
Asn	Asp	Tyr	Ala	Phe	Val	Arg	Thr	Gly	Ala	Gly	Val	Asn	Leu	Leu	Ala
225					230					235					240
Gln	Val	Asn	Asn	Tyr	Ser	Gly	Gly	Arg	Val	Gln	Val	Ala	Gly	His	Thr
				245					250					255	
Ala	Ala	Pro	Val	Gly	Ser	Ala	Val	Cys	Arg	Ser	Gly	Ser	Thr	Thr	Gly
			260					265					270		
Trp	His	Cys	Gly	Thr	Ile	Thr	Ala	Leu	Asn	Ser	Ser	Val	Thr	Tyr	Pro
		275					280						285		
Glu	Gly	Thr	Val	Arg	Gly	Leu	Ile	Arg	Thr	Thr	Val	Cys	Ala	Glu	Pro
	290					295					300				
Gly	Asp	Ser	Gly	Gly	Ser	Leu	Leu	Ala	Gly	Asn	Gln	Ala	Gln	Gly	Val
305					310					315					320
Thr	Ser	Gly	Gly	Ser	Gly	Asn	Cys	Arg	Thr	Gly	Gly	Thr	Thr	Phe	Phe
				325					330					335	
Gln	Pro	Val	Asn	Pro	Ile	Leu	Gln	Ala	Tyr	Gly	Leu	Arg	Met	Ile	Thr
			340					345					350		
Thr	Asp	Ser	Gly	Ser	Ser	Pro	Ala	Pro	Ala	Pro	Thr	Ser	Cys	Thr	Gly
	355						360						365		
Tyr	Ala	Arg	Thr	Phe	Thr	Gly	Thr	Leu	Ala	Ala	Gly	Arg	Ala	Ala	Ala
	370					375					380				
Gln	Pro	Asn	Gly	Ser	Tyr	Val	Gln	Val	Asn	Arg	Ser	Gly	Thr	His	Ser
385					390					395					400
Val	Cys	Leu	Asn	Gly	Pro	Ser	Gly	Ala	Asp	Phe	Asp	Leu	Tyr	Val	Gln
				405					410					415	
Arg	Trp	Asn	Gly	Ser	Ser	Trp	Val	Thr	Val	Ala	Gln	Ser	Thr	Ser	Pro
			420					425					430		
Gly	Ser	Asn	Glu	Thr	Ile	Thr	Tyr	Arg	Gly	Asn	Ala	Gly	Tyr	Tyr	Arg
		435					440					445			
Tyr	Val	Val	Asn	Ala	Ala	Ser	Gly	Ser	Gly	Ala	Tyr	Thr	Met	Gly	Leu
	450					455					460				
Thr	Leu	Pro													
465															

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 <211> 189  
 <212> PRT  
 <213> Cellulomonas spp.

<400> 8

Phe	Asp	Val	Ile	Gly	Gly	Asn	Ala	Tyr	Thr	Ile	Gly	Gly	Arg	Ser	Arg
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Cys	Ser	Ile	Gly	Phe	Ala	Val	Asn	Gly	Gly	Phe	Ile	Thr	Ala	Gly	His
			20					25					30		
Cys	Gly	Arg	Thr	Gly	Ala	Thr	Thr	Ala	Asn	Pro	Thr	Gly	Thr	Phe	Ala
		35					40					45			
Gly	Ser	Ser	Phe	Pro	Gly	Asn	Asp	Tyr	Ala	Phe	Val	Arg	Thr	Gly	Ala
		50				55					60				
Gly	Val	Asn	Leu	Leu	Ala	Gln	Val	Asn	Asn	Tyr	Ser	Gly	Gly	Arg	Val
65					70					75					80
Gln	Val	Ala	Gly	His	Thr	Ala	Ala	Pro	Val	Gly	Ser	Ala	Val	Cys	Arg
				85					90					95	
Ser	Gly	Ser	Thr	Thr	Gly	Trp	His	Cys	Gly	Thr	Ile	Thr	Ala	Leu	Asn

	100		105		110										
Ser	Ser	Val	Thr	Tyr	Pro	Glu	Gly	Thr	Val	Arg	Gly	Leu	Ile	Arg	Thr
	115						120					125			
Thr	Val	Cys	Ala	Glu	Pro	Gly	Asp	Ser	Gly	Gly	Ser	Leu	Leu	Ala	Gly
	130					135					140				
Asn	Gln	Ala	Gln	Gly	Val	Thr	Ser	Gly	Gly	Ser	Gly	Asn	Cys	Arg	Thr
145					150					155				160	
Gly	Gly	Thr	Thr	Phe	Phe	Gln	Pro	Val	Asn	Pro	Ile	Leu	Gln	Ala	Tyr
				165					170				175		
Gly	Leu	Arg	Met	Ile	Thr	Thr	Asp	Ser	Gly	Ser	Ser	Pro			
			180						185						

<210> 9  
 <211> 28  
 <212> PRT  
 <213> Cellulomonas strain 69B4

<400> 9

Met	Thr	Pro	Arg	Thr	Val	Thr	Arg	Ala	Leu	Ala	Val	Ala	Thr	Ala	Ala
1				5					10					15	
Ala	Thr	Leu	Leu	Ala	Gly	Gly	Met	Ala	Ala	Gln	Ala				
				20				25							

<210> 10  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<220>  
 <221> misc\_feature  
 <222> (3)..(3)  
 <223> n is a, c, g, or t

<400> 10  
 acnacsggst ggcrgtgcgg cac

23

<210> 11  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
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<220>  
 <221> misc\_feature  
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 <223> n is a, c, g, or t

<400> 11  
 angngccgcc ggagtcncc

19

<210> 12  
<211> 58  
<212> PRT  
<213> Cellulomonas strain 69B4

<400> 12

Asp Gly Trp Asp Cys Gly Thr Ile Thr Ala Leu Asn Ser Ser Val Thr  
1 5 10 15  
Tyr